Remarks/Arguments:

By this Amendment, Applicants have amended claims 1-7, 19, and 20. Applicants have also cancelled claim 18. Claims 1-17 and 19-69 are pending. Claims 70-93 have been withdrawn.

Objection to the Abstract

At numbered paragraph 3 of the Office Action, the Examiner has objected to the Abstract on informal grounds. Applicants have amended the Abstract to overcome the basis for the Examiner's objection. Applicants respectfully submit that the Abstract as amended is in a proper format and includes the proper language.

Claim Rejections Under Section 103(a)

Claims 1-17, 21-27, 30-32, 38-40, 44-45, 48-50, 53-58, and 64-69 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over either JP 9265738 ("the Japanese Reference") or U.S. Patent No. 6,515,834 to Murphy ("the Murphy Patent") in view of U.S. Patent No. 4,374,402 to Blessom ("the Blessom Patent"). By this Amendment, Applicants respectfully traverse the Section 103(a) rejection.

Claims 1 and 7 are independent claims. Claims 2-6 are directly or indirectly dependent on claim 1, and claims 8-17 and 19-69 are directly or indirectly dependent on claim 7.

Turning first to independent claim 1, it is directed to an information recording/reproducing apparatus and includes the following elements:

- a head support mechanism including a head and a slider for carrying the head,
- main driving means for driving the head via the head support mechanism,
- wherein the head support mechanism further includes:

- a load beam,
- a member for supporting the slider, the member being coupled to one end of the load beam,
- **a first thin plate formed on the member,**
- **a first driving sub-means including a first thin film which is affixed on the first thin plate,**
- **a second thin plate formed on the member, the second thin plate being different from the first thin plate,**
- **a second driving sub-means including a second thin film which is affixed on the second thin plate,**
- **wherein the first and second driving sub-means are configured to be driven so that one of the first and second driving sub-means expands along a longitudinal direction of one of the first and second thin films while the other of the first and second driving sub-means shrinks along a longitudinal direction of the other of the first and second thin films, thereby causing a flexural deformation of each of the first and second thin plates such that a micro-movement of the head is performed along a tracking direction.**

The amendment to claim 1 is not the addition of new matter, but is based on disclosures found throughout the originally filed application; for example see page 32, lines 1-28 with respect to Figures 7A-7D.

It is Applicants' contention that the information recording/reproducing apparatus defined by claim 1 is patentably distinguished from the references of record at least based on the structure of the first thin plate, first driving sub-means, second thin plate, and second driving sub-means, as well as the following feature (which is described for assistance to the Examiner with respect to the information recording/reproducing apparatus shown in Figures 7A-7D) of the

first and second driving sub-means (15a or 15b) being configured to be driven so that one of the first and second driving sub-means (15a or 15b) expands along a longitudinal direction (DD or FF) of one of the first and second thin films while the other of the first and second driving sub-means (15b or 15a) shrinks along a longitudinal direction (FF or DD) of the other of the first and second thin films, thereby causing a flexural deformation of each of the first and second thin films (5b3, 5b4) such that the micro-movement of the head (1) is performed along a tracking direction (B). The foregoing feature of claim 1 is generally referred to as the "Driving Sub-Means Feature" of Applicants' claimed invention. Simply put, neither the Japanese Reference, the Murphy Patent, nor the Blessom Patent teach or suggest the Driving Sub-Means Feature of Applicants' claimed invention.

To implement the micro-movement of the head (1), it is necessary to have the following features (a) and (b), as recited in claim 1:

(a) the first and second thin plates (5b3, 5b4) are formed on a member (a tip portion of flexure 5b) which is coupled to one end of a load beam (5c);

(b) the first driving sub-means (15a) includes a first thin film which is affixed to the first thin plate (5b3), and the second driving sub-means (15b) includes a second thin film which is affixed on the second thin plate (5b4).

These features which Applicants have identified as (a) and (b) are not found in the references of record, and thus the references of record simply lack the Driving Sub-Means Feature of Applicants' claimed invention.

The Japanese Reference in general shows in Figure 1 piezoelectric actuators (7a, 7b) disposed on both sides of a suspension 3, and are discretely operated to twist the suspension 3. But the head support mechanism shown in the Japanese Reference fails to teach or suggest the above noted feature (a) since the piezoelectric actuators (7a, 7b) are formed on a load arm section 5, but does not structurally correspond to feature (a) of first and second thin plates formed on a member (a tip portion of the flexure) which is coupled to one end of the load beam. Also, the Japanese Reference fails to teach or suggest the above noted feature (b) because this feature is based on the above noted feature (a).

The Murphy Patent concerns, in general, a side-arm microactuator with piezoelectric adjustor. The microactuation system of Murphy selectively alters a position of a transducing head carried by a slider in a disk drive system with respect to a track of a rotatable disk having a plurality of concentric tracks. But more specifically, the Murphy Patent fails to teach or suggest the above noted feature (a) because the piezoelectric elements 32a and 32b are disposed on an actuator arm 14 (see Figures 2A and 2B), but this structure simply does not correspond to the structure of the above noted feature (a) as defined in Applicants' claim 1. In addition, the Murphy Patent fails to teach or suggest the above noted feature (b) because this feature is based on feature (a) of the first and second thin plates being formed on a member (a tip portion of the flexure) which is coupled to one end of the load beam.

The Blessom Patent relates, in general, to a piezoelectric transducer mounting structure. The Office Action points to magnetostrictive strips 33 and 35 which are part of a compound-bending flexure 30 shown in Figures 7A-7C. The magnetostrictive strips 33 and 35 are bonded to a relatively rigid core 31 as described in the Blessom Patent at column 9, lines 59-68. But more specifically, the Blessom Patent fails to teach or suggest the above noted feature (b) of Applicants' claimed invention because the magnetostrictive strips 33 and 35 are bonded to the same rigid core 31 (see Figures 7A-7C, for example). This structure is different than Applicants' claimed invention because the claimed first and second driving sub-means are affixed on different thin plates as set forth in Applicants' claim 1.

Thus, there is a very real difference between Applicants' invention including the above identified features (a) and (b) and the resulting feature of the Driving Sub-Means Feature all of which is set forth in claim 1, to which claims 2-6 depend. Because the Japanese Reference, Murphy Patent, and Blessom Patent lack the above noted features of Applicants' claimed invention, these references either alone or in combination do not teach or suggest the recording/reproducing apparatus of Applicants' claimed invention. Applicants therefore request that the Section 103(a) rejection directed to claims 1-6 be withdrawn.

Claim 7 is an independent claim which has been amended by incorporating the features of claim 18 (now cancelled). Claim 18 has been identified by the Examiner as including allowable subject matter. Thus the amendment of claim 7 by the addition of the features of claim 18 places claim 7 in condition for allowance. Claim 7 and dependent claims 8-17 and 19-69 are therefore patentably distinguished over the references of record.

Based on the foregoing discussion, Applicants respectfully submit that the Section 103(a) rejections directed to claims 1-17 and 19-69 be withdrawn and these claims should be allowed.

Allowable subject matter

Claims 18-20, 28-29, 33-37, 41-44, 47, 51-52, and 59-63 are objected to as being dependent upon a rejected based claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The above noted dependent claims are either directly or indirectly dependent on claim 7. Applicants respectfully submit that as now amended, claim 7 is in condition for allowance. Therefore, there is no need for Applicants further amendment of any of the above identified claims.

In view of the foregoing remarks and amendments, Applicants respectfully submit that claims 1-17 and 19-69 are in condition for allowance. Reconsideration and allowance of all pending claims are respectfully requested.

Respectfully submitted,

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Attachments: Abstract

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The Commissioner for Patents is hereby authorized to charge payment to Deposit Account No. **18-0350** of any fees associated with this communication.

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail, with sufficient postage, in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on: **November 9, 2004**

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ABSTRACT

A head support mechanism includes a head and a slider for carrying the head, the head being caused to track by main driver, wherein the head support mechanism further includes sub-driving device including a thin film and causing the head to have a micro-movement; and the sub-driving device causes the head to have a micro-movement by utilizing flexural deformation of the thin film.